UNITED
NATIONS

E

Economic and Social Council

Distr.
GENERAL

E/C.10/AC.3/1993/2
29 January 1993

ORIGINAL: ENGLISH

COMMISSION ON TRANSNATIONAL CORPORATIONS
Intergovernmental Working Group of Experts
on International Standards of Accounting
and Reporting
Eleventh session
4-12 March 1993
Item 3 (a) of the provisional agenda*

ACCOUNTING EDUCATION AND STRENGTHENING OF THE PROFESSION: COMPARATIVE STUDY OF CURRICULA FOR ACCOUNTANTS AND AUDITORS IN AFRICA, ASIA, EUROPE, LATIN AMERICA AND NORTH AMERICA, INCLUDING PRE-QUALIFICATION AND CONTINUING EDUCATION PROGRAMMES IN PUBLIC AND PRIVATE INSTITUTIONS AND EXAMINATION AND CERTIFICATION PROGRAMMES

Global review of the state of accounting and auditing education and training

Report of the Secretary-General

SUMMARY

The present report is concerned explicitly with the current state of accounting education. It constitutes a global view based on responses to a questionnaire sent to all member Governments. As such, it provides a unique opportunity to draw conclusions from a large sample (83 questionnaires returned), across many countries (62), and thereby enhances the state of knowledge of global accounting and auditing education. The average profile of the accounting education system that emerges from the data reveals a technically oriented curriculum taught by underpaid (and frequently inadequately prepared) faculty, who sometimes use irrelevant teaching

* E/C.10/AC.3/1993/1.

93-06218 3861i (E) 120293 170293

/...

materials. It is to the credit of accounting instructors around the world that given all these obstacles, they are still able to meet (albeit only moderately) the quality demands of the profession. Since a positive correlation was found between the quality and status of the profession on the one hand and the quality of accounting education in a given country on the other, recommendations for improving accounting education are made in this report.

CONTENTS

	Paragraphs	Page
INTRODUCTION	1 - 5	4
I. LITERATURE REVIEW	6 - 14	5
II. ANALYSIS AND DISCUSSION OF SURVEY DATA	15 - 41	7
III. RELATIONSHIP BETWEEN THE ACCOUNTING PROFESSION AND ACCOUNTING EDUCATION	42 - 51	15
IV. CONCLUSIONS AND RECOMMENDATIONS	52 - 61	18
REFERENCES		22
Annex. Additional tables		23

INTRODUCTION

1. During its tenth session, the Intergovernmental Working Group of Experts on International Standards of Accounting and Reporting decided to devote its eleventh session to one topic, accounting education. The purpose would be to examine in depth the role and responsibilities of accountants in the global economy and to determine, if possible, whether accounting education was adequately preparing accountants for their role and responsibilities. The present report is concerned explicitly with the existing state of things. It provides a global review of the current state of accounting and auditing education and training (hereinafter referred to as AAET) based on responses to a questionnaire distributed by the United Nations to all member Governments.

2. The education of accountants is critical in terms of the ability of the accounting profession to meet its ever-expanding responsibilities; therefore, gaining an understanding of the current state of accounting education is extremely worthwhile. Accounting is a profession that requires analytical skills and a decision-making orientation, as well as mastery of standards, procedures and techniques. Only if the work of accountants and of the accounting profession is viewed in this manner will the profession draw to itself the best and the brightest, as well as earn the respect of users and the public at large.

3. In any country, the state of the profession and the state of accounting education are inseparable. In a country where accountants are respected, accounting education will achieve high quality, and such high-quality education will in turn provide the profession with better accountants. These relationships will be discussed in more detail throughout the remaining portions of this report, and in particular in section III.

4. In the following section, a brief review is provided of the recent literature on accounting and auditing education and training. Section II contains an analysis and discussion of survey observations on the state of the accounting profession and accounting education in over 40 countries from around the globe. Section III provides a statistical analysis of the links between the accounting profession and accounting education, while section IV, which concludes the report, makes recommendations regarding the possible means to improve the quality of accounting and auditing education and training.

5. As noted, the concluding section does include recommendations that are based on the analysis of the data. None the less, this report does not generally focus on such questions as what ought to be. Other reports to the Working Group at its eleventh session are devoted to the issue of the responsibilities of the accounting profession and the direction of AAET. There are also reports to the Working Group at this session devoted to a country analysis, and those reports will shed more light at the national level on the unique aspects of the issues under consideration. From the country analyses, a regional picture emerges.

I. LITERATURE REVIEW

6. The present section provides a brief review of recent literature on accounting and auditing education and training (AAET). The review is not intended to be comprehensive, but rather to describe the existing state of knowledge as available in a subset of the accounting literature found in the United States of America. The purpose of this review is to help focus upon the great diversity of the approaches to accounting education that exists around the globe and to set the stage for a discussion of the results of the survey as reflected in the data contained in the questionnaires. To ensure that the scope of the review does not exceed the scope of this report, articles concerning the future of accounting education (what ought to be) are not cited or reviewed. 1/

7. The studies discussed can be classified as either single-country studies or cross-country ones.

Single-country studies

8. Single-country studies constitute the largest category by far. Some of the more recent studies in this category are included in a 1990 publication from the Center for International Education and Research in Accounting of the University of Illinois at Champaign-Urbana. That publication contains country studies, for example, on Bangladesh, Barbados, Belgium, Canada, France, Germany, India, Indonesia, Panama and the United Kingdom of Great Britain and Northern Ireland. Other important sources are the Proceedings of the Sixth International Conference on Accounting Education (1987) and the forthcoming proceedings of the Seventh International Conference on Accounting Education (1992). In addition, there is the newly inaugurated European Accounting Review, which consists mostly of single-country studies, but also offers a regional focus.

9. The studies referenced above, as well as other, similar ones, provide a detailed description of the state of accounting education in a single country, either with or without references to other countries used as models for emulation or benchmarks for comparison. The importance of these studies lies in the fact that they provide the background and the foundation for all meaningful international research.

10. Naturally, such studies are primarily concerned with accounting education systems in the author's country, where data are likely to be more available. However, this body of work is not without its weaknesses, which will be addressed later on in this section.

Cross-country studies

11. Cross-country studies constitute the second major category of literature relating to accounting and auditing education and training. Those studies compare specifically and explicitly the education systems of two or more countries, or of countries within a single region. Owing to their objective,

they are usually more structured and less comprehensive than single-country studies. Included in the cross-country studies category is the work of Hassan (1987), involving a United Kingdom-United States comparison; of Loft (1987), which compares the educating and certifying of auditors in England and Denmark; and of Anyane-Ntow (1992), which analyses accounting education and certification in 26 countries. The contribution of this group of studies has been in the area of the modelling of accounting education systems, and that contribution has included the ability to draw broader conclusions about the state of global accounting education.

Evaluation

12. There are problems inherent in most accounting and auditing education studies, such as those discussed above. Most important, there is not a single reference point across all studies, nor do they necessarily ask similar research questions. For example, in the recent collection of country studies published by the University of Illinois, the subject of the research questions ranged from the education of professional accountants to the relation between accounting education and economic change under five-year plans. While each study is in and by itself interesting and informative, the results and conclusions may be relative only to a specific reference point - that taken by the study's individual authors.

13. None the less, an interesting picture does emerge upon reviewing the results of these studies. There is a great diversity among the accounting education systems and philosophies that exist around the globe. Some education models approach accounting as a technical skill, while others view it as an analytical profession. This difference in approach is evident in the composition of courses within a particular accounting programme. Accounting programmes that take the view of accounting as a technical skill concentrate heavily on specific accounting courses, that is, they emphasize the technical and functional courses listed as professional subjects by the International Federation of Accountants (IFAC) (1992). These include financial, managerial and governmental accounting, taxation, auditing, and electronic data processing. Those accounting programmes that adhere to the view of accounting as an analytical profession try to strike a balance among general education, decision-making, skills orientation and required knowledge of specific accounting topics - that is, they place more emphasis on IFAC's list of supportive courses such as business finance, management, economics and business ethics.

14. The following section describes the results of the data analysis that was conducted on the responses to the questionnaires. That analysis sheds some light on trends in accounting education programmes around the globe. The importance of the current project undertaken by the Intergovernmental Working Group of Experts on International Standards of Accounting and Reporting lies in the fact that it provides the capability to draw conclusions from a large sample across many countries, and in so doing, enhances the state of knowledge on global accounting and auditing education and training.

II. ANALYSIS AND DISCUSSION OF SURVEY DATA

15. The present section of this report provides an analysis of the responses to a survey that was conducted in October-November 1992 by the Accounting Section of the Transnational Corporations and Management Division of the Department of Economic and Social Development of the United Nations Secretariat.

Questionnaire distribution and responses

16. The questionnaires were sent to various governmental and professional organizations, and to academic institutions and individuals, in 186 countries. Thus, more than one questionnaire was distributed to each country, the number of questionnaires distributed depending upon the number of appropriate organizations and institutions within the country concerned. The questionnaires were in English, French and Spanish. Responses received in a language other than English were translated into English for the purpose of this analysis. Eighty-three questionnaires were returned by 62 countries. This constitutes a response rate of 33 per cent (higher than the usual rate both for the Working Group's annual note verbale and for a questionnaire of this nature). The Transnational Corporations and Management Division hereby acknowledges, with appreciation, the cooperation of the respondents in providing the information requested.

17. Sixty-eight questionnaires, representing 49 countries, were available for analysis in this report, the remaining 15 questionnaires having arrived too late. Analysis of the questionnaires (table 1) indicates that the 68 responses were distributed fairly evenly among the three major types of respondent: government agency, educational institution and professional organization. It is interesting to note that in the group of countries from which only a single response was received, government agencies contributed almost half of the total responses; on the other hand, in the group of countries from which multiple responses were received, professional organizations provided the large majority of responses, owing to the fact that many of those countries have multiple professional accounting organizations. For example, in the United Kingdom, out of six responses received, five were from professional organizations.

18. Of the 68 questionnaires available for this study, 60 (representing 43 countries) were used in tabulating and analysing the data reported below. In the 12 cases where multiple responses were received from a single country, a single score representing an average of the usable responses was employed. A questionnaire was considered unusuable if either the number of missing answers was extremely large or (as was the case in a few instances) its poor physical quality upon return made it impossible to process. In some instances it was clear that the respondent had not provided a relevant response to a specific question; such a response was therefore considered a missing value.

Table 1. Response to survey, by type of responding organization and by country grouping (based on total responses returned)

Type of organization	Questionnaires received from the group of countries returning a total of: One	Two	Three or more (multiple)	Total
Government agency	16	2	1	19
Educational institution	5	4	4	13
Professional organization	11	10	9	30
Other	4	0	2	6
Total	36	16	16	68

19. A subset of survey questions concerned with the existing state of things was identified, and the data involved were analysed in two dimensions, one measuring the quality and status of the profession and the other the quality of accounting education. In section III further analysis of the links between the two dimensions is presented. A hypothesis was formulated positing that countries ranking higher within the professional dimension would offer accounting education of a higher quality relative to countries ranking lower.

20. The choice of which variables from the questionnaire to include and of how to measure those variables was based on the experience of the researchers with respect to the accounting profession and accounting education.

Quality and status of the profession

21. Table 2 provides descriptions and summary statistics for the variables that were used to develop the measure of the quality and status of the accounting profession. Further statistics for the variables are presented in annex table A-1.

Table 2. Variables used to develop the measure of the quality and status of the accounting profession

Variable	Number of countries	Mean score	Standard deviation
Professional designations: number of designations existing in a country out of a maximum of four	44	2.6	1.2
Length of examinations: number of hours required for certification examinations	26	13.7	7.6
Required work experience: percentage of countries that require work experience in addition to examinations	39	85	a/
Work experience: required length of work experience (months)	34	32.9	15.3
Programme length: duration of degree programme (months)	43	49.0	9.2
Pre-entry requirements: required length of preparation prior to entering a professional programme (years)	41	12.1	0.5
Granting institutions: number of institutions that grant or offer programmes towards an independent auditor designation (up to 10)	42	4.9	3.4
Correspondence courses: percentage of countries where a correspondence course is not allowed	43	49	a/
Earnings potential: percentage salary increase for auditors or private sector accountants over 10 years	37	282	111.8

a/ Not applicable.

Discussion of table 2

22. The following brief discussion of the quality and status of the accounting profession in the responding countries emerges from an analysis of the variables presented in table 2.

23. Four possible professional designations (accounting technician, government accountant, business sector accountant, and independent auditor) were included in the survey. A greater variety of designations within a

country implied specialization within, and thus the higher quality of, the profession. On the average, there were 2.6 (out of a possible 4) professional designations per country. The discussion that follows concentrates on the independent auditor designation.

24. Stricter programme requirements for the independent auditor designation, as reflected by programme length (duration in months of the educational programme required for one to be considered an independent auditor) and pre-entry requirements (years of primary and secondary school required to enter such a programme), indicate a higher quality of the profession in the country. The average length of the programme offering the required education is about four years (49 months) and the pre-entry requirement is a high school diploma (12 years).

25. Similarly, stricter degree and certification requirements dictated for independent auditors - as measured by length of the certification examination (in hours), required work experience (supervised apprenticeship) in addition to passing the examinations, and length of work experience (in months) - also indicate a higher-quality profession. The data reveal that certification examinations take almost 14 hours (typically comprising three or four examinations, each between 3-4 hours in length), that 85 per cent of the countries surveyed require work experience in addition to written examinations and that the average duration of required work experience is 33 months (the median score was 36 months). 2/ It is worth noting that the International Federation of Accountants (IFAC) recommends a period of 36 months of required work experience. Thus, it appears that many countries already meet the IFAC guidelines with respect to required work experience.

26. Additionally, a greater number of leading granting institutions (which offer programmes of study leading to the independent auditor designation), and the requirement of attendance at structured classes within academic institutions, versus the allowing of the substitution of correspondence courses, are interpreted as being indicators of a higher-quality accounting profession in a particular country. Since the respondents were able to list up to 10 leading universities on the questionnaire, this number was used as the maximum possible score. On the average, there are five granting institutions per country, but roughly half the countries allow some form of study by correspondence. 3/

27. Finally, an earnings potential variable was calculated, as the percentage increase in the salary of independent auditors (or of business sector accountants, whenever data for auditors were not available) over a 10-year period. This variable is a reasonable measure of the market power and status of the profession; that is, a high-status profession is indicated by a relatively high percentage increase in salary over an individual professional's career, owing to the fact that high-quality individuals are attracted to a profession with a higher earnings potential. As indicated in table 2, the average increase was almost 300 per cent. (The maximum and minimum reported increases, as shown in annex table A-1 were 500 and 130 per cent, respectively, with a median of 250 per cent.)

Quality and status of the accounting education system

28. Table 3 provides descriptions and summary statistics for the variables that were used to develop the measure of the quality and status of accounting and auditing education and training (AAET) in particular countries. Further statistics for the variables are presented in annex table A-2.

Table 3. Variables used to develop the measure of the quality and status of the accounting education system

Variable	Number of countries	Mean score	Standard deviation
Full-time faculty (as percentage of total faculty)	41	68	24
Faculty with Doctor of Philosophy degree (Ph.D.) (as percentage of total faculty)	42	31	34
Faculty with professional certification (as percentage of total faculty)	41	37	34
Faculty salary (entry-level) (as percentage of that of auditors)	37	89	47
Faculty salary (after 10 years) (as percentage of that of auditors)	37	59	30
Programme composition (as percentage deviation of main components from American Assembly of Collegiate Schools of Business (AACSB) guidelines)	42	27	12
Professional courses (out of a maximum of 7 listed courses)	43	5.6	0.9
Support courses (out of a maximum of 11 listed courses)	43	7.7	1.8
Analytical courses (as percentage of countries offering such courses)	43	81	a/
Professional involvement (as percentage of countries where the profession is involved in country AAET)	43	95	a/

Table 3 (continued)

Variable	Number of countries	Mean score	Standard deviation
Serious programme deficiencies (out of a maximum of 4)	43	1.8	1.1
Monitoring and accreditation of accounting programmes by the Government or the profession (as percentage of countries having such a mechanism in place)	43	72	a/
Product quality: perceived level of quality of preparation of accountants (maximum score = 4)	40	2.9	0.7

a/ Not applicable.

Discussion of table 3

29. The following brief discussion of the quality and status of accounting education in the responding countries emerges from an analysis of the variables presented in table 3.

30. It could have been expected that high-quality accounting and auditing education would be positively related to the percentage of full-time faculty, as well as of full-time faculty possessing an advanced degree such as a Doctor of Philosophy (Ph.D.) degree and/or a professional certification, such as one for certified public accountant (CPA); in other words, an educational system that has a significant number of full-time faculty and faculty with advanced and/or professional degrees is likely to be of higher quality than one that has fewer such full-time or qualified faculty.

31. According to the data, 68 per cent of the accounting education faculty are full time. Thirty-one and 37 per cent of them hold Ph.D. and professional degrees, respectively. Further statistical analysis of these data confirms the expectation that perceived product quality (last variable listed in table 3) is positively correlated with percentage of full-time faculty. The distribution for the faculty with Ph.D. variable is skewed (the median score is only 15 per cent, as reported in annex table A-2), owing to the fact that several respondents indicated that 100 per cent of their faculty held a Ph.D. degree.

32. A competitive salary will attract more, better-qualified faculty, thus raising the quality of accounting education in a given country. Faculty compensation relative to the salary of independent auditors (or business sector accountants) was measured at two points: entry level and after 10 years; that is, from the responses received, faculty salaries, at entry level and after 10 years of work, were calculated as a percentage of those of independent auditors and, if appropriate, of those of business sector accountants. The average entry-level salary for faculty is 89 per cent of that of independent auditors. The gap widens significantly after 10 years, when the average faculty salary is only 59 per cent of that of auditors.

33. Two important points should be drawn from these data. First, entry-level faculty salaries are competitive in several countries, and they even exceed those of entry-level auditors in Canada, Japan, Jordan, Panama, Singapore, Sweden, Ukraine and the United States. However, 10 years later, even in those countries where the salaries have been competitive (with the exception of Egypt, Japan, Ukraine and the United States), accounting faculty are not well paid in relation to their colleagues in the private sector. Second, further analysis of the data indicates that faculty salaries (relative to those in the private sector) at both entry level and after 10 years are positively correlated with the percentage of those having Ph.D.s, but not with the percentage of those having professional certification. This is an indication of the fact that countries whose educational institutions have more Ph.D. holders on their accounting faculty pay higher salaries to such individuals, and it also demonstrates the economic rewards for the greater effort involved in obtaining a Ph.D. degree.

34. A major factor in determining the quality of an education system is naturally the curriculum. To judge the quality implications of the content of accounting programmes, the American Assembly of Collegiate Schools of Business (AACSB) guidelines were used. According to those guidelines, roughly 50 per cent of the courses should be from the liberal arts or general education category. For the purpose of the study under discussion, a variable measuring quality of accounting education in a country by the absolute deviation of the programme's course composition from that in the AACSB guidelines was employed. 4/ The results indicate that the average accounting programme tends to be heavily tilted towards accounting and business courses, devoting only 20 per cent of course time to general education and liberal arts courses. 5/

35. The number of professional and support courses that are offered on a regular basis, as well as of analytical courses that are designed to enhance the individual's decision-making capabilities, affects the quality of an accounting programme. Most programmes elect to provide at least five accounting and seven support courses from the courses listed in the questionnaire (see annex table A-3 for a listing of those courses). Unfortunately, the course offered least is international accounting.

36. The existence of a monitoring and accreditation mechanism in the country is another measure of the quality of the accounting curriculum. Almost three quarters of the responding countries indicated that such a mechanism was in place; that is, in the majority of the countries responding to the survey there is an external body, either governmental or professional or both, that monitors the quality of the accounting education system.

37. Professional involvement in the country's AAET is deemed an indicator of a high-quality programme, since that involvement brings relevant practical issues into the curriculum. The questionnaire listed four types of professional involvement: teaching courses at educational institutions, giving seminars, hiring interns and producing accounting instructional materials. Because of the subjectivity of judgement that would have been required, no differentiation among those different types of involvement was made other than the non-inclusion of hiring of interns as a measure of involvement. Thus, this item was not included in the quality measure. Ninety-five per cent of the respondents indicated some level of professional involvement in accounting education in their country. This high level of professional involvement is definitely a positive phenomenon.

38. The questionnaire did not ask respondents to indicate whether the accounting profession in their country provided any financial aid to educational institutions or to individual faculty. This type of professional support has become quite common in the United States and has had and continues to have a very positive effect on accounting education in that country. This issue will be discussed further in section IV of this report.

39. Four of the programme deficiencies listed in the questionnaire were identified as serious ones, and an education system was considered to be of

lower quality if it had been judged to suffer from many of those deficiencies. The four serious deficiencies were lack of well-prepared students at the entry level; lack of trained faculty; inadequate or inappropriate curricula; and lack of relevant teaching materials (including textbooks) to adequately apply accounting principles to practical problems. 6/ The average programme suffered from two of the four possible serious deficiencies. The leading deficiency reported was lack of trained faculty, followed closely by lack of relevant teaching materials. These observations will be discussed further in the concluding section.

40. Finally, the degree to which accounting education was judged to be producing a quality product for the profession was analysed. Respondents were asked to indicate whether their country's accounting education was meeting completely, moderately, inadequately or not at all the need for quality preparation of accountants. A score of 4 was assigned to the response indicating the need was being completely met and a score of 1 to the response indicating the need was not being met. The average programme (reflected in a mean score of 2.9) was perceived to be meeting moderately the need for quality preparation of accountants.

41. Overall, the average profile of the accounting education system that emerges from the data is one depicting a technically oriented curriculum taught by underpaid (and frequently inadequately prepared) faculty, who sometimes use irrelevant teaching materials. It is to the credit of accounting instructors around the world that given all these obstacles, they are still able to meet (albeit only moderately) the quality demands of the profession.

III. RELATIONSHIP BETWEEN THE ACCOUNTING PROFESSION AND ACCOUNTING EDUCATION

42. In order to better understand and analyse the data received through the questionnaires, certain relationships between the quality of the accounting profession in a particular country and the quality of accounting education in that country have been hypothesized. Those relationships are based on the notion that a country's national accounting systems are shaped by their environment, and that different environments are likely to lead to the emergence of different accounting systems. A country's national accounting system includes, among other things, both the accounting profession and the accounting and auditing education and training available in that country. This environmental approach to the diversity of accounting systems is well established in the literature (see, for example, Choi and Mueller (1992)).

43. The above-mentioned hypothesis links the quality and status of the accounting profession in a given country to the quality of its accounting and auditing education and training (AAET). It is postulated that the quality of AAET will be positively correlated with the quality and status of the accounting profession. Simply put, AAET is expected to be more developed (of higher quality) in countries where the accounting profession has achieved higher status and is judged to be of higher quality.

44. Not only is this hypothesis straightforward and intuitively appealing, but the implications are strong and practical. The findings indicate that attempts to improve accounting education in any given country are likely to achieve significant success only when the quality and status of the profession have attained a certain level (and vice versa), owing to the fact that an educational programme that prepares students for a low-status profession neither draws the best teachers and the brightest students, attracts government and private sector funding nor holds out the promise of a rich and fulfilling career. Without these elements, the quality of accounting education will suffer in any environment.

Statistical relationship between quality of a country's accounting profession and quality of its accounting education

45. To facilitate the analysis, a subset of survey questions concerned with the existing state of things in each country both with respect to the accounting profession and accounting education was identified. These data, which were analysed in section II, will now be used to develop the link between the quality of a country's accounting profession and the quality of its accounting education.

46. Table 4 provides the summary quality scores for each dimension (professional and educational). The raw score was calculated by adding up, using a relative benchmark, the individual scores for each variable so that each variable had a maximum score of 1.00, except for extreme circumstances. For the dimension of quality and status of the profession, the total raw score had a potential maximum of 9.00, which was the sum of the scores of the nine variables. The observed responses ranged from 2.35 to 10.35. For the dimension of quality and status of education, the total raw score had a potential maximum of 11.00, and the observed responses ranged from -1.00 to 11.51. It is important to note that while the scoring was designed around a maximum of 9.00 or 11.00, it is possible to achieve a greater score owing to extreme circumstances (for example, an unusually large number of years of required work experience, or extreme levels of faculty salaries). Finally, since there was no objective way of measuring the relative importance of individual components, an equal weight was assigned to each variable in calculating the overall score.

47. The following example illustrates how these scores were calculated. As presented in table 2, the professional designations variable is a measure of the number of existing designations (out of a maximum of four) in a given country. Thus, a country that had three different designations received a score of 0.75 (3/4). This score of 0.75 was then combined with the other raw scores for the dimension of quality and status of the profession, for the purpose of calculating the total score for that country. The mean total raw score for all the countries in the sample was 6.52.

Table 4. Quality scores for the professional and educational dimensions

	Number of countries	Mean	Standard deviation
Profession (raw)	43	6.52	1.90
Profession (scaled)	43	0.82	0.10
Education (raw)	43	6.13	2.24
Education (scaled)	43	0.48	0.20

Note: The raw score for each country signifies the sum of scores of all variables in the dimension considered. The maximum value is 9.00 for profession, 11.00 for education. The scaled score for each country signifies the sum of scores of all variables in the dimension considered, with missing variables omitted from consideration. The maximum value for either dimension is 1.00. (See text for further discussion.)

48. The scaled score, also provided in table 4, is the raw score scaled to take into account the missing values in the responses from the individual countries. Thus, if a country did not provide all the information requested, the scoring mechanism omitted the missing variables from the calculation and based the country's score only on the available data. For each country, a maximum scaled score of 1.00 would be derived if all the available data from the responses indicated the highest quality. In this way, a country was not penalized for missing information. The observed results ranged from 0.46 to 1.14 for the professional dimension, and from -0.33 to 0.88 for the education dimension. 7/ As expected, the raw and scaled scores were highly correlated, at the 0.0001 significance level. This is reassuring since it indicates that the calculation of a scaled score does not materially change the nature of the variables.

49. A directional relationship between the two dimensions was not hypothesized; that is, it was not assumed that the quality of education drove quality of the profession, or vice versa. Because the statistical analysis was carried out without established expectations as to the direction of the relationship, a correlation analysis was conducted.

50. Table 5 provides the results of the correlation procedure. As can be seen in the table, the basic hypothesis relating the quality of the accounting profession in a country to the quality of accounting and auditing education and training in that country is supported by the evidence for each score type. The scaled scores are slightly less correlated than the raw scores, but both are within very reasonable significance levels.

Table 5. Correlation results for the profession/education scores

	Correlation coefficient	Significance level a/
Raw scores	0.467	0.002
Scaled scores	0.398	0.008

a/ Probability that the correlation coefficient would have attained the values given if its real value had been zero.

51. In conclusion, the summary data indicate that the survey responses attributed a moderate level of quality to the profession, based on a world-wide average. The mean score was 6.52 out of a possible 9.00 (72 per cent), and the scaled score was 0.82 out of a possible 1.00. The average accounting education system was judged by the survey respondents to be at a relatively lower quality level compared with the profession, as reflected in a mean score of 6.13 out of a possible 11.00 (56 per cent), and a scaled score of 0.48 out of a possible 1.00. The results of the statistical analysis should further motivate the international accounting community to deliberate and take action in order to improve the state of global accounting and auditing education and training. The final section concludes with recommendations for such action.

IV. CONCLUSIONS AND RECOMMENDATIONS

52. The present report has reviewed the current state of global accounting and auditing education and training. Both a literature review and an empirical analysis of data (gathered by the Accounting Section of the Transnational Corporations and Management Division of the Department of Economic and Social Development of the United Nations Secretariat from member countries and organizations) were undertaken.

53. From the literature review it was concluded that the previous studies, owing to data limitations or design preference, had generally been concerned with the state of accounting education and the accounting profession in a single country (a majority of the studies) or in a small group of countries, typically a geographical region (a minority of the studies). Each study had reflected the preferences and orientations of its author(s), and as a result comparison across studies are difficult. There is clearly a need for a truly global review of accounting and auditing education and training.

54. Based on the available and usable data from the questionnaires, an analysis was conducted and some preliminary conclusions were drawn. That analysis has revealed that the quality and status of the accounting profession

in a country are positively correlated with the quality of the accounting education in that country. The direction of such relationships was not hypothesized, but additional analysis should be conducted in order to achieve a further understanding of these relationships.

55. Nevertheless, the Governments and professional organizations in member countries should be aware that the level of accounting education and the status of the profession are related, and in order for one to improve, there has to be improvement in the other. While it is clear that raising the status of the accounting profession will improve the quality of accounting education, recommendations in this report are limited to the various aspects of accounting education.

56. The analysis provides evidence that in a country, a positive relationship exists between accounting faculty status, as measured by faculty salary levels relative to those of auditors, and perceived quality of the product of the education system. Thus, responsible parties, such as local and national Governments and educational institutions, could be encouraged to take steps to ensure competitive salaries for accounting faculty at entry level and throughout their career. Competitive salaries will provide the necessary incentive for promising individuals to pursue careers in accounting education and research.

57. The questionnaire did not ask respondents to indicate whether the accounting profession in their country provided any financial aid to educational institutions or to individual faculty. This type of professional support has become quite common in the United States and has had a very positive effect on accounting education. The Working Group could act as a catalyst in this matter and together with IFAC encourage professional organizations to follow the example of the United States. Not only will such support enhance the level of accounting-related knowledge within the country, but it also can serve to improve the real income of faculty, and thus provide some of the required incentives discussed above.

58. As noted in the above discussion, the average programme suffers from two of a possible four serious deficiencies. The leading deficiency reported was lack of trained faculty, followed closely by lack of relevant teaching materials. Recommendations regarding faculty salaries and support that will help ensure the supply of appropriately trained accounting faculty have been made. The United Nations and the Working Group could also act to improve the supply of trained faculty, but this will take a long time and depend on such uncontrollable circumstances as economic conditions and availability of qualified individuals in each country. However, the Working Group could act faster, and with measurable impact, on behalf of the second most important deficiency, that is, the lack of relevant teaching material.

59. The Working Group could undertake to create an acceptable curriculum, perhaps using IFAC's educational guidelines as a starting-point. It should strive to incorporate judiciously the AACSB guidelines or those from other countries, where appropriate, and initiate a programme to create and

distribute teaching material to all members who have indicated a need for such materials. In this regard:

(a) It is recommended that the Group approach the professional organizations and accounting firms, and initiate discussions with them concerning the possibility of funding research and other educational efforts including the creation of adequate teaching material that can be used in a variety of countries;

(b) Of particular importance is the development and improvement of courses that teach analytical skills, unstructured problem-solving and decision-making. While four fifths of the responding countries noted the existence of such courses, the Working Group could encourage all members to consider inclusion of such courses in their programmes, and to continuously improve existing courses.

60. Finally, it should be noted that this survey is an important pioneering venture in the gathering of such data as have been discussed in the present report. This effort should be encouraged and expanded, and to fully utilize its potential the following is recommended with respect to data gathering and analysis:

(a) Member countries and organizations could be asked to provide more complete information about the various aspects of accounting and auditing in their countries. Efforts could be made to guarantee a full understanding of the information required, and ample time should be allowed for the responding organizations to provide complete and accurate data;

(b) The resulting database should be managed in a professional fashion. The data should be computer-readable and -usable, so as to facilitate further analysis and expanded knowledge;

(c) The Working Group could actively support research projects that utilize the database, as well as any additional data which might be gathered as needed.

61. These recommendations do not cover the entire range of possible actions; they are designed to serve as a basis for further discussion and action by the Working Group. The implementation of the above recommendations will take many years. However, the Working Group may wish to do whatever is in its power, and the profession may likewise wish to harness whatever resources are at its disposal, to improve the quality of accounting and auditing education and training world wide.

Notes

1/ In recent years a number of articles have been written that address future trends in accounting education, especially in the United States, where many universities are currently involved in major curriculum revision projects. However, articles have also appeared in journals published in various other countries.

2/ The data for length of examinations were available for only 26 countries. It appears that many respondents misinterpreted the question and assumed that it implied length of years required to complete study for the degree.

3/ This statistic of an average of five institutions granting a degree leading to the independent auditor designation, is somewhat misleading owing to the fact that only 10 leading universities could be listed on the questionnaire. Some countries have many more than 10 such granting institutions. For example, the Prentice-Hall 1991 Accounting Faculty Directory, compiled by James Hasselback, lists over 700 universities, primarily from the United States, that grant accounting degrees. Although not all of those could be classified as leading institutions, more than 10 would probably meet the criteria of such classification. Thus, the actual average is probably somewhat higher, with its distribution highly skewed.

4/ We recognize that AACSB guidelines are limited primarily to the United States and thus have limited applicability. Furthermore, any such measure that evaluates a university's accounting programme is subjective and based on all the levels of education that exist in the particular country concerned. For example, many countries have a much higher level of secondary school education than exists in the United States. This high level of secondary school education may mitigate the need for a higher percentage of liberal arts and general education courses at the university level.

5/ Because of the limited applicability of the AACSB guidelines as a benchmark, the statistical analysis was repeated omitting this variable. While the results did improve slightly, they were not significantly different from those obtained when the variable was included.

6/ There was clearly an element of judgement involved in having selected just four of the listed deficiencies as serious. Any of those deficiencies would seriously affect the quality of an accounting programme. The additional deficiencies listed in the questionnaire (lack of physical facilities, lack of computers and related software, and too large class-size, among others) were not sufficiently critical in themselves or as a group to seriously affect the quality of an accounting programme.

7/ Some of the variables carried a negative value, for example, serious programme deficiencies. Therefore, if a country's educational system had no positive qualities but many deficiencies, it could receive a negative score.

References

Anyane - Ntow, Kwabena (1992). International Handbook of Accounting Education and Certification. New York: Pergamon Press.

Choi, F. D. S., and G. G. Mueller (1992). International Accounting. Englewood Cliffs, New Jersey: Prentice-Hall.

Hassan, N. A. (1987). A comparative study of the contribution and influence of accounting professional bodies to the accountant's education in the United Kingdom and the United States. In Proceedings of the Sixth International Conference on Accounting Education. Kyoto, Japan. 7-10 October 1987.

International Federation of Accountants (1992). IFAC Handbook 1992: Technical Pronouncements. New York.

Loft, A. (1987). Educating and certifying auditors: a comparative study of England and Denmark. In Proceedings of the Sixth International Conference on Accounting Education. Kyoto, Japan. 7-10 October 1987.

Needles, B. E., and V. K. Zimmerman, eds. (1990). Comparative International Accounting Educational Standards. Champaign-Urbana, Illinois: University of Illinois, Center for International Education and Research in Accounting.

Annex

ADDITIONAL TABLES

Table A-1. Further statistics for quality and status of the accounting profession

	Minimum	Median	Maximum
Professional designations	0.0	3.0	4.0
Length of examinations	1.0	12.0	36.0
Required work experience	a/	a/	a/
Work experience	0.0	36.0	84.0
Programme length	30.0	48.0	60.0
Pre-entry requirements	12.0	12.0	15.0
Granting institutions	0.0	5.0	10.0
Corresponding courses	a/	a/	a/
Earnings potential (percentage)	130	250	500

a/ Not applicable.

Table A-2. Further statistics for quality and status of the accounting education system

	Minimum	Median	Maximum
Full-time faculty (as percentage of total faculty)	15	80	100
Faculty with Ph.D. (as percentage of total faculty)	0	15	100
Faculty with professional certification (as percentage of total faculty)	0	25	100
Faculty salary at entry (as percentage of that of auditors)	27.5	75	200
Faculty salary after 10 years (as percentage of that of auditors)	10	55	150
Programme percentage deviation from AACSB guidelines	0	25	50
Professional courses (out of a 7-course list)	4.0	6.0	7.0
Support courses (out of an 11-course list)	4.0	8.0	10.0
Analytical courses	a/	a/	a/
Professional involvement	a/	a/	a/
Programme deficiencies (maximum = 4)	0.0	2.0	4.0
Monitoring and accreditation	a/	a/	a/
Product quality (maximum score = 4)	1.0	3.0	4.0

a/ Not applicable.

Table A-3. Listing of courses in the questionnaire

Professional courses
Financial accounting
Management accounting
Government accounting
Taxation
International accounting standards
Auditing
Electronic data-processing and information systems
Support courses
Business finance
Management
Marketing
Business policies
Economics
Business ethics
Law
Mathematics
Behavioural sciences
Written communication skills
Oral communication skills